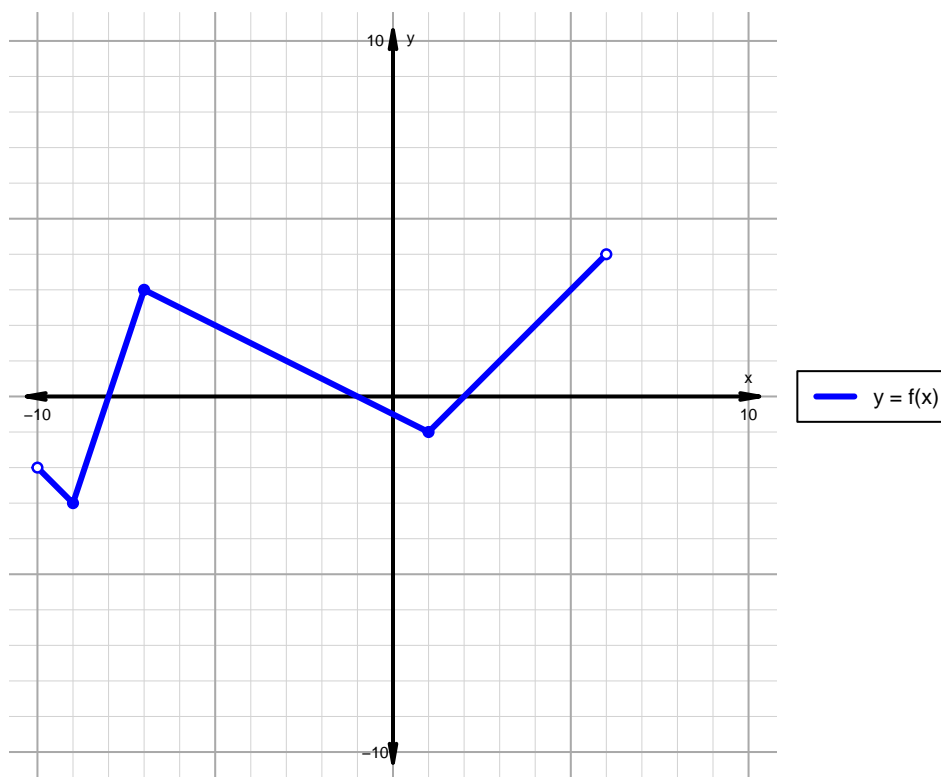


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 29)**

1. The function  $f$  is graphed below.

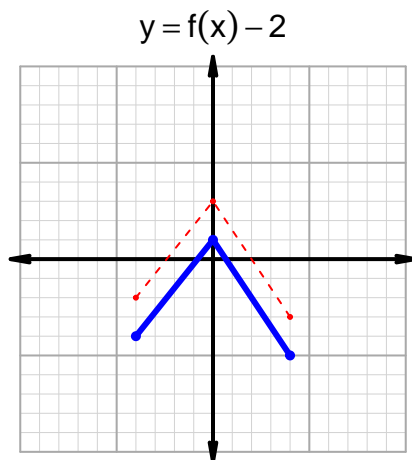
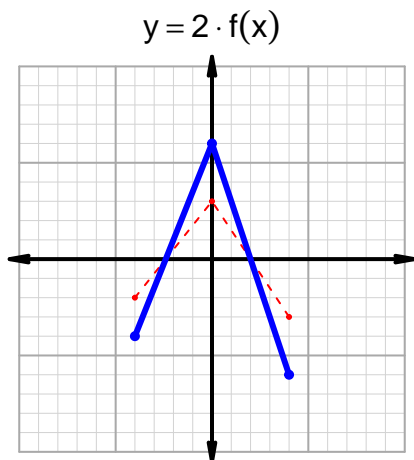
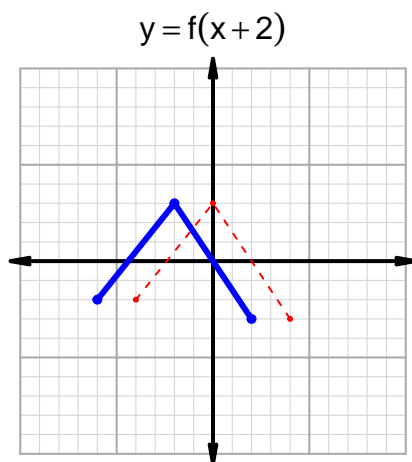
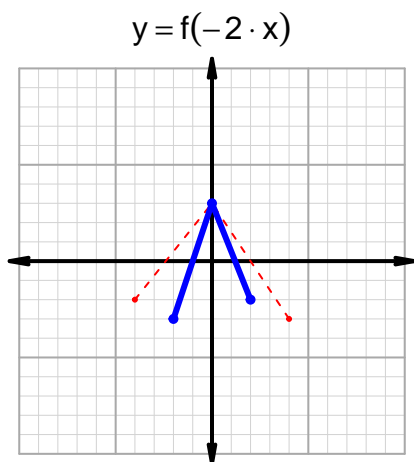


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-8, -1) \cup (2, 6)$
Negative	$(-10, -8) \cup (-1, 2)$
Increasing	$(-9, -7) \cup (1, 6)$
Decreasing	$(-10, -9) \cup (-7, 1)$
Domain	$(-10, 6)$
Range	$(-3, 4)$

## Intervals, Transformations, and Slope Solution (version 29)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 29$  and  $x_2 = 57$ . Express your answer as a reduced fraction.

$x$	$g(x)$
14	29
29	77
57	14
77	57

$$\frac{f(57) - f(29)}{57 - 29} = \frac{14 - 77}{57 - 29} = \frac{-63}{28}$$

The greatest common factor of -63 and 28 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{4}$$